

This subgenus also is in a sense intermediate between the two groups noted above in that it has a combination of important characters of both groups, but in a manner reverse from that of the subgenus *Gobidus*. The scales are large (34-37) as in *Gobica*, while it has θ and τ like *Gobionellus*. The body shape is intermediate between that of the last two named subgenera. *Gobatinus* has the teeth in the upper jaw usually in one row, sometimes a second incomplete inner row is present. In the other subgenera, the teeth in the upper jaw are in 2-5 rows, depending on the subgenus.

***Congruogobius*, n. subgen.**

Genotype.—*Gobionellus liolepis* (Meek and Hildebrand) = *Euctenogobius liolepis* Meek and Hildebrand.

This subgenus differs from all others in having the two dorsal fins confluent and the scales cycloid, except that the scales on a narrow strip

along a median area on the posterior part of the body are weakly ctenoid or cycloid. In these two characters it is somewhat intermediate between the genera *Gobionellus* and *Gobioides* but much nearer the former. Indeed, *Gobionellus* and *Gobioides* are nearer in relationship than has been heretofore suspected. This is shown not only by the somewhat intermediate positions occupied by the subgenus *Congruogobius*, but by other characters as well, especially by the lateral line organs, a discussion of which would take us too far afield here. The scales in *Congruogobius* are 77-84; θ and τ are present. In the latter two characters, as well as in the shape of the body and the number of fin rays, it nearly agrees with or is nearest to the subgenus *Gobionellus*. The interorbital is rather wide as in the subgenus *Gobionellus*, while the eye is even smaller than in that subgenus when specimens of the same size are compared. In the latter two characters it also somewhat approaches *Gobioides*.

MALACOLOGY.—*Amnicola brandi*, a new species of snail from northwestern Chihuahua. ROBERT J. DRAKE, Biblioteca y Museo de Sonora, Hermosillo, Sonora. (Communicated by Joseph P. E. Morrison.)

In the middle of April 1949, the writer was in northwestern Chihuahua with Prof. C. Clayton Hoff, of the Department of Biology of the University of New Mexico. At that time, Dr. Hoff was the recipient of a grant-in-aid from the United States Public Health Service for collecting and studying ectoparasites (fleas and lice) of rodents in northern Chihuahua and southern New Mexico. During this trip, at Las Palomas, Distrito Galeana, Chihuahua, the type material of the species of fresh-water amnicolid snail here described was collected. The Las Palomas region is the type locality of another amnicolid, described as *Bythinella palomasensis* by Henry A. Pilsbry (1895: 68-69; Dall, 1898: 369-370). He based his description on two dead shells that had been collected in April 1892 by Edgar A. Mearns, military medic and naturalist of the International Boundary Commission of the United States and Mexico. Mearns, assisted by Frank X. Holzner, made daily collecting visits to Lake Palomas during the period from April 7 to April 15, 1892. (Mearns, 1907: 10). In the description of *Bythinella palomasensis*, Mearns's locality

was given as merely at "Lake Palomas, northeastern [sic] Mexico."

Lake Palomas in northwestern Chihuahua, as it normally existed in the later 1800's, is no more. Then it consisted of a chain of shallow and marshy ponds connected by a small running stream, all of which terminated in a more or less broad and shallow permanent lake. The area of the old lake bed now fills with water only during the short rainy season; otherwise, it is a dusty and waterless flat.

The small town of Columbus, Luna County, N. Mex., is on the border. The small Mexican port-of-entry and customs station at Palomas, Chihuahua, is 1 mile south of Columbus. Las Palomas is a small collection of adobe houses 6 miles south of Palomas and the border. It is at Las Palomas, Chihuahua, that "some fine, bold springs" as noted in the International Boundary Commission report (1898, pt. II: 16) are located. The species of Amnicolidae described, lives in the Las Palomas springs with another amnicolid (undetermined, perhaps a *Lyrodes*), the common pea-clam *Pisidium abditum* Haldeman, and

a form of the everpresent *Physa*. No shells belonging to the present new species were found that remotely resemble the single illustration of the moderately high and narrow *Bythinella palomasensis* Pilsbry (Dall, *loc. cit.*, pl. 31, fig. 9).

The region was very dry at the time of our 1949 trip; no land shells were found alive or aestivating. Some shells were gathered from the *rejectamenta* of the Rio Casas Grandes at the Vado de Fusiles about 30 miles due south of Palomas and the border. They will be reported on in time.

Dr. Harald A. Rehder, curator, Division of Mollusks, U. S. National Museum, kindly provided illustrations of the type material for this paper. Dr. Joseph P. H. Morrison, of the same division, gave much help in many ways.

Amnicola brandi, n. sp.

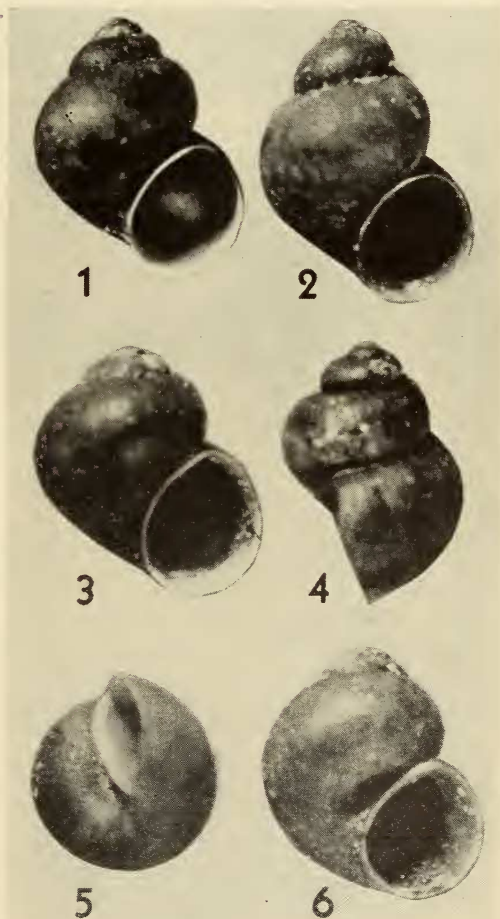
Figs. 1-6

Holotype.—The shell is white, under average size for genus, and globose. The spire is short and rounded; the protoconch is elevated and slightly eroded. The umbilicus is deeply perforate and narrow. The surface exhibits very faint growth wrinkles. There are 3.9 whorls which are convexly inflated and have some shouldering at the moderately impressed sutures. The aperture is oval, wider than high; its height and width equal about half the height and width of the entire shell. The inner lip flares slightly, is very white, and its callus forms a rounded rim on the side next to the umbilicus. The holotype (U.S.N.M. no. 601494) measures: length, 2.2 mm; width, 1.8 mm; aperture length, 1.0 mm; aperture width, 1.0 mm. It was collected by C. Clayton Hoff and Robert J. Drake, on April 15, 1949, in springs at Las Palomas, Chihuahua.

This species is named in honor of Dr. Donald D. Brand because of his long period of active interest in the geography, archeology, and natural history of northern Mexico—especially that of northwestern Chihuahua. Brand's archeological writings are so steeped in geographic description that his works on northwestern Mexico are indispensable references for naturalists and anthropologists interested in study of the area (see especially Brand, 1935, 1936, 1937, 1943).

Paratypes: The five descriptonal paratypes (U.S.N.M. no. 601495) are illustrated (Figs. 2-6). About 200 paratypes were collected. They

have been deposited as follows: Wendell O. Gregg Collection, 5132; Academy of Natural Sciences of Philadelphia, 185402; Ernest J. Roscoe Collection, 295; Morris K. Jacobson Collection, 2257; Department of Paleontology of the California Academy of Sciences, 32878; Allyn Hancock Foundation of the University of Southern California, 1230; Carnegie Museum, 62.39827; Chicago Natural History Museum, 32001; Museum of Zoology of the University of Michigan, 169876; Drake Molluscan Collection, 1459, 1460; Museum of Comparative Zoology, 185251; Department of Geology Museum of the University of New Mexico, 1347; Elmer G. Berry Collection; Laboratory of Conchology of the Biblioteca y Museo de Sonora; Stanford University Paleontological Type Collection, 8025;



FIGS. 1-6.—*Amnicola brandi*, n. sp.: 1, Holotype (U.S.N.M. no. 601494); 2-6, paratypes (U.S.N.M. no. 601495).

American Museum of Natural History, 72857; S. S. Berry Collection; Joshua L. Baily, Jr., Collection; Museum of Paleontology of the University of California, 36121-36129; San Diego Society of Natural History; Allyn G. Smith Collection, 9027; Hans Friedrich Collection, 9936; U. S. National Museum, 600499, 600500.

Discussion.—*Amnicola brandi* is a species that is small in size when compared with most of the amnicolids of the eastern United States and Canada. This feature is shared in common by all Southwestern Amnicolidae. Consistency of characters is evidence for long isolation and “inbreeding” for the species. Dr. Joseph P. E. Morrison (1949) has presented a classification of the subfamilies of the Amnicolidae based primarily on reproductive features. These four subfamilies are: Hydrobiinae, Bythinellinae, Buliminae, and Emmericiinae. Dr. Morrison has examined the male organs of some of the preserved paratypes of *Amnicola brandi*. He reports *brandi* has only one functional duct in the male reproductive system. Therefore the species is placed generally in the Hydrobiinae. (The operculum is paucispiral with the concave side next to the animal.) The genus of *brandi* is closest to what is considered *Amnicola* s. s. In time, a new generic category may have to be established for *brandi*. To do so now and before Morrison’s results of many years of study with

the family are available to all concerned would only be confusing. Many species that have been placed in *Amnicola* very probably belong in “*Amnicola*” and consequently in any of the subfamilies now recognized as biological.

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